

WHAT IS CLAIMED IS:

1. An apparatus for wrapping and binding and fastening a load with a flexible wrapping material, said apparatus comprising:
 - (a) supply means for supplying the flexible stretch wrapping material as a full web wrap and as a spiral web wrap under tension,
 - (b) a rotatable support means for rotating a load and wrapping a load with a material web wrap as a full web wrap and as a spiral web wrap of material under tension,
 - (c) rope making means for supplying a rope-like configuration from the flexible stretch wrapping material as a material web by compressing the material web into a rope-like configuration under tension as required by a control means after said material web wrap,
 - (d) first holder positioner means for positioning at a predetermined space apart from said load being wrapped a portion of said rope provided by said rope making means as a first rope,
 - (e) second holder positioner means for positioning at a predetermined space apart from said load being wrapped as a portion of said rope provided by said rope making means as a second rope, as a continuation of said first rope,
 - (f) a twist tie mechanical tie means for binding together first and second ropes supplied by said supply means and provided by said rope making means, wherein said twist tie mechanical tie means fastens and binds together said first and second ropes as a tied unit between said first and said second holder positioner means
 - (g) cut-clamp hot wire mechanical means for clamping portion of said second rope held in first and second holder positioners of first and second ropes fastened and bound together between said first and second holder positioner means, said clamping of second rope portion at a location apart from said first and second

holder positioner means, and cutting said second rope portion at said location apart from said first and second holder positioner means

(h) control means connected to said supply means, said rotatable support means, said rope making means, said first holder positioner means, said second holder positioner means, said twist tie mechanical tie means, and said cut-clamp hot wire mechanism means for controlling operations thereof

2. The apparatus of Claim 1 wherein said supply means is mounted in a carriage which can be controlled to move vertically.
3. The apparatus of Claim 1 wherein said rotatable support means comprises a turn table activated and rotatably controlled by said control means.
4. The apparatus of Claim 1 wherein said rope making means is activated to provide said flexible stretch wrapping material as a material web and as a rope-like configuration by said control means.
5. The apparatus of Claim 1 wherein said first and second rope holder positioner means engage the first and second portions of said rope-like configuration designated as first and second ropes supplied by said supply means and said rope making means as activated by said control means, said second rope as a continuation of said first rope.
6. The apparatus of Claim 1 wherein said cut-clamp hot wire mechanism means is activated to provide clamping of said second rope of said first and second ropes bound together between first and second holder positioner means at a location apart from said first and second holder positioner means and provide cutting of said second rope at said apart location and said cut-clamp hot wire mechanism means is controlled by said control means to clamp and cut said two ropes.
7. The cut-clamp hot wire mechanism means of Claim 6 wherein said cut means of said cut-clamp hot wire mechanism means comprises a hot wire cutting mechanism.

8. The apparatus of Claim 1 wherein said cut-clamp hot wire mechanism means comprises a hot wire cutting mechanism, said first and second holder positioner means comprise rope holder positioners, twist tie mechanical tie means comprises a mechanical twist tie device and said control means comprises a programmable logic controller.
9. The apparatus of Claim 1 wherein said cut-clamp hot wire cutting mechanism, said rope holder positioners, said mechanical twist tie device are moved into activated positions by activation of pneumatic cylinders controlled by said control means which comprises a programmable logic controller.
10. The apparatus of Claim 1 wherein said twist tie mechanical tie device binds together first and second ropes provided by said rope making means as a tied unit by placing a twist tie metal wire tie mechanism around said two ropes as held by said two rope holder positioners.
11. The apparatus of Claim 1 wherein said twist tie mechanical tie binds together first and second ropes provided by said rope making means as a tied unit by placing a twist tie plastic wirelike tie mechanism around said two ropes as held by said two rope holder positioners.
12. The apparatus of Claim 1 wherein release of first and second ropes fastened and bound together as a tied unit from holder positioners secures the wrapped load by the released ropes as a tied unit retracting against the wrapped load from the force of the stretch wrap tension.
13. In a wrapping apparatus having a fastening and binding mechanism and a source of stretch wrap flexible material, a method of fastening and binding the stretch material to itself to secure a stretch material wrap around a load utilizing a mechanical twist tie mechanism to fasten and bind the stretch material to itself with the next to last wrap and final wrap around the load which method comprises

- (a) placing a load to be wrapped upon a stretch wrapping apparatus comprising a turn-table for rotating a load with rotational tension,
- (b) supplying under tension a stretch wrap flexible material from a supplying means as a full material web to wrap the load,
- (c) positioning the stretch wrap flexible material web onto the load to affix under tension the flexible material web to the load,
- (d) rotating the load on said turn table to wrap the load under material web tension as a full material web wrap and as a spiral web wrap to provide a material web wrap of the load under tension wherein said flexible material web is grabbed by a roping device at the end of the first full wrap revolution of the load,
- (e) compressing of said flexible material web by said roping device to compress said material web for holding by a first holder positioner of a rope-like configuration wrapped around the load as said turn-table continues to rotate the load for a second full revolution of the load to provide a second portion of a rope-like configuration wrapped around the load for holding by second holder positioner,
- (f) activating two rope holder positioners to move from home positions to catch the rope-like configurations at predetermined locations,
- (g) activating a cut-clamp hot wire mechanism to move from home position to clamp onto second portion of said rope-like configuration at a predetermined location after the second rope holder positioner,
- (h) activating a twist-tie mechanism to move from home position to fasten and bind together as a tied unit of first portion and second portion of said elongated rope-like configuration as first and second ropes at a predetermined location between said two rope holder positioners,
- (i) activating said cut-clamp mechanism to cut the second portion of said elongated rope-like configuration at said predetermined location by a hot wire mechanism,

- (j) releasing said tied unit of said first and second ropes from said rope holder positioners wherein said tied unit snaps back into position against the wrapped load from force of the stretch wrap tension,
- (k) activating said supplying means of said stretch wrap flexible material to return to home position, activating said roping device, said rope holder positioners, said cut-clamp hot wire mechanism, and twist-tie mechanism to return to home positions.

14. The method of Claim 13 for fastening and binding said stretch material to secure a stretch material web wrap around a load utilizing a mechanical twist tie mechanism to fasten and bind the stretch material web to itself with the next to last wrap and the final wrap around the load wherein the mechanical twist tie mechanism comprises a twist-tie metal wire tie mechanism.

15. The method of Claim 13 for fastening and binding said stretch material web wrap around a load utilizing a mechanical twist tie mechanism to fasten and bind the stretch material web to itself with the next to last wrap and the final wrap around the load wherein the mechanical twist tie mechanism comprises a twist tie plastic wirelike tie mechanism.

16. The method of Claim 13 for fastening and binding said stretch material web to secure a stretch material web wrap around a load utilizing a mechanical twist tie mechanism to fasten and bind the stretch material tail end to itself as a tied unit which on release of said fastening and binding snaps back into position against the wrapped load from the force of the stretch wrap tension.